

REMARKS

Claims 1-5, 8-12, 15-20, 25 and 26 are pending. The Office Action rejects Claims 1-5, 8-12, 15, 17-18, 20, 25, and 26 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pat. No. 7,095,798 to Hunton ("Hunton") in view of U.S. Pat. No. 5,963,091 to Chen et al. ("Chen"). Applicants note that the heading of Section 3 on page 2 of the Office Action does not list Claim 5. However, Claim 5 is treated as being rejected in view of the combination of Hunton and Chen on page 5 of the Office Action. Claims 16 and 19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hunton in view of Chen and further in view of U.S. Pat. No. 7,061,990 to Wright et al. ("Wright").

In light of the subsequent remarks, Applicants respectfully submit that the claims are in condition for allowance.

The Rejection of Independent Claims 1, 8, 15, 17, and 18 under §103(a) is Overcome

Independent Claims 1, 8, 15, 17, and 18 ("the independent claims") are alleged to be unpatentable over the combination of Hunton and Chen. A method according to Claim 1 comprises generating a residual signal from a multicarrier signal. The residual signal represents a difference between the multicarrier signal and a hard-clipped multicarrier signal. The method further comprises applying a least squares function to the residual signal for at least one carrier of the multi-carrier signal, thereby generating a minimized residual signal for the at least one carrier. The method additionally comprises combining the minimized residual signals and the multicarrier signal. Independent Claims 8, 15, 17, and 18 recite substantially similar features insofar as this discussion is concerned and are directed to an apparatus, system, apparatus, and system, respectively.

In response to the previous Office Action of March 3, 2009, the Applicants submitted that, among other things, Hunton did not teach or suggest "generating a residual signal from a multicarrier signal, the residual signal representing a difference between the multicarrier signal and a hard-clipped signal." Although the present Office Action has now cited Chen in combination with Hunton in rejecting the independent claims, the Office Action continues to submit that Hunton teaches "generating a residual

signal from a multicarrier signal, the residual signal representing a difference between the multicarrier signal and a hard-clipped signal.” However, the present Office Action does not even acknowledge the arguments submitted by the Applicants in the previous response with respect to this feature and uses the exact same verbiage as was used in the Office Action of March 3, 2009 when discussing the feature.

Applicants continue to submit that Hunton does not teach or suggest “generating a residual signal from a multicarrier signal, the residual signal representing a difference between the multicarrier signal and a hard-clipped signal” as recited by the independent claims. In particular, Applicants submit that Hunton does not teach or suggest generating a residual signal which is the difference between the multicarrier and hard-clipped multicarrier signals. Although Hunton appears to mention peak suppression, Hunton fails to provide any teaching of determining the difference between a signal and the hard-clipped version of the signal, e.g., subtracting a hard-clipped signal from another (multicarrier) signal. In Hunton, the peak suppression signal is added to the signal at 130 (combined at combiner 130). In embodiments of the present invention, on the other hand, the peak suppression signal is subtracted from the carrier signal. Accordingly, Hunton does not teach or suggest “generating a residual signal from a multicarrier signal, the residual signal representing a difference between the multicarrier signal and a hard-clipped signal.” Moreover, neither Chen nor any other cited reference, taken alone or in combination with Hunton cures the deficiencies of Hunton.

Since none of the cited references, taken alone or in combination, teach or suggest “generating a residual signal from a multicarrier signal, the residual signal representing a difference between the multicarrier signal and a hard-clipped signal,” none of the cited references, taken alone or in combination, teach or suggest applying a least squares functional to the residual signal for at least one carrier. The Office Action submits that Hunton teaches “applying a function to the residual signal,” but admits Hunton does not disclose applying a least square function. However, Applicants submit that Hunton does not even teach or suggest applying any function to the residual signal because Hunton does not even suggest generating a residual signal representing a difference between the multicarrier signal and a hard-clipped multicarrier signal. In Hunton, V_F is the signal

which emanates from a correction circuit and, therefore, is obtained from a signal peak suppression unit. The present independent claims clearly recite that the least squares function is applied to a signal which is the difference between the carrier signal and the hard-clipped signal. Therefore, V_F of Hunton is not a difference signal.

Moreover, even when taken in combination with Hunton, Chen does not teach or suggest applying a least square function to a residual signal representing a difference between the multicarrier signal and a hard-clipped multicarrier signal. At most, Chen teaches using a recursive least square calculator to calculate adjustment signals based on a recursive least square algorithm. See, Col. 2, lines 30-40 of Chen. However, Chen, whether taken alone or in combination with Hunton, does not teach or suggest applying a least square function to a residual signal representing a difference between the multicarrier signal and a hard-clipped multicarrier signal, as recited by the independent claims.

Accordingly, Hunton and Chen, whether taken alone or in combination, fail to teach or suggest each feature of the independent claims. Further, none of the other cited references cure the deficiencies of Hunton and Chen. Applicants therefore respectfully submit that the independent claims are patentably distinct from the cited references, taken alone or in combination, such that the rejection is overcome. Applicants further respectfully submit that the independent claims are in condition for allowance.

The Rejection of the Dependent Claims is Overcome

Because each of the dependent claims includes each of the recitations of a respective independent base claim, Applicants further submit that the dependent claims are patentably distinguishable from the cited references, taken alone or in combination, for at least those reasons discussed above. Accordingly, applicants respectfully submit that the rejections of the dependent claims are overcome and the dependent claims are in condition for allowance.

CONCLUSION

In view of the amended claims and remarks presented above, it is respectfully submitted that all of the present claims of the present application are in condition for immediate allowance. It is therefore respectfully requested that a Notice of Allowance be issued. The Examiner is encouraged to contact Applicants' undersigned attorney to resolve any remaining issues in order to expedite examination of the present application.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,



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